PB85-214047

Superfund Record of Decision (EPA Region 7)
Aidex Site, Council Bluffs, Iowa
(Initial Remedial Measure), August 1983

(U.S.) Environmental Protection Agency
Washington, DC

24 Aug 83

U.S. Department of Commerce
National Technical Information Service
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Environmental Protection
Agency

Office of
Emergency and
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EPA/ROD/R07-83/001
August 1983

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EPA

Superfund Record of Decision:

Aidex Site,IA (IRM)

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15. SUPPLEMENTARY NOTES

16. ABSTRACT

The Aidex site is an abandoned pesticide formulation facility, located about seven miles southeast of Council Bluffs, IA, covering an area of about 20 acres. The site is located in the Missouri River flood plain, and is within a two-mile radious of 42 shallow domestic water wells. The ground water under the site, an alluvial aquifer, has been found to be contaminated; the potential for contamination of nearby drinking water wells exists. Contamination of soil and on-site ground water have resulted from handling, storing and disposing of pesticide formulation process wastes and from post-firefighting operations. Site contaminants include significant concentrations of organophosphate, organochlorine, s-triazine and atrazine.

The cost-effective Initial Remedial Measure (IRM) selected for this site includes: off-site disposal of bulk liquids and semi-solids by deep well injection and on-site drainage control during Phase I, and off-site disposal of solids, soils and debris from the site during Phase II. The probable capital cost of the IRM was estimated to be $718,595.

17. KEY WORDS AND DOCUMENT ANALYSIS

a. DESCRIPTORS	b. IDENTIFIERS/OPEN ENDED TERMS	c. COSATI Field/Group
Record of Decision Aidex Site, IA Contaminated media: gw, soil Key contaminants: pesticides, organic phosphates, triazines, organic chlorines, VOCs		

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RECORD OF DECISION

Remedial Alternative Selection for
Initial Remedial Measures

SITE

Aidex Corporation, Council Bluffs, Iowa

DOCUMENTS REVIEWED

I have reviewed the following documents describing the cost effectiveness analysis of remedial alternatives at the Aidex Site:

- Feasibility Study for Initial Remedial Measure Revision I, Aidex Corporation, Council Bluffs, Iowa, April 1983.
- Remedial Action Master Plan and Project Work Statements, Aidex Corporation, Council Bluffs, Iowa, September 1, 1982.
- Description of Current Situation, Aidex Corporation, Council Bluffs, Iowa, November 30, 1982.
- Staff Summaries and Recommendations

DESCRIPTION OF SELECTED OPTIONS

Phase I
- On-site collection, bulking, and temporary staging of pesticide contaminated solids, liquids and sludges.
- Analysis of collected waste materials.
- Construction of an interceptor drainage ditch around a portion of the site.
- Off-site transport and disposal of bulk liquid wastes by deep well injection at a permitted facility.

Phase II
- Off-site transport and disposal at a permitted facility of remaining materials staged during Phase I.

DECLARATIONS

Consistent with the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) and the National Contingency Plan, I have determined that the proposed Initial Remedial Measure for on-site collection bulking and staging of waste materials, off-site transportation and disposal of waste liquid and solid materials, and on-site drainage control is technically feasible, cost effective, consistent with final remedial alternatives, and necessary to limit exposure to a significant health and environmental hazard. Also, I have determined that the action being taken is appropriate when balanced against the need to use Trust Fund money at other sites. Finally, I have determined that the off-site transport of hazardous substances is more cost-effective than other remedial actions and, therefore, consistent with section 101(24) of CERCLA.

Lee M. Thomas
Assistant Administrator
Office of Solid Waste and
Emergency Response

[redacted]

BRIEFING SHEET

The purpose of this briefing sheet is to obtain AA approval for the initial remedial measures recommended by Region 7 and the State of Iowa for the Aidex site. A "Record of Decision" has been prepared to document the approval.

The Aidex site is an abandoned pesticide formulation facility located approximately seven miles south-southeast of Council Bluffs, Mills County, Iowa, and covers an area of approximately twenty acres.

Environmental sampling and analyses from field investigations of the Aidex site indicate significant concentrations of organophosphate, organochlorine, and s-triazine pesticides in the soil and atrazine pesticides in the soil and atrazine contamination in ground water on-site. Contamination resulted from the handling, storing, and disposing of pesticide formulation process wastes.

Black & Veatch Consulting Engineers completed a Feasibility Study for Initial Remedial Measure in April 1983. Eight initial remedial measure alternatives were identified and evaluated. Black & Veatch determined that three of these alternatives were technically feasible and would solve current problems. Black & Veatch recommended that an initial remedial measure be implemented in two phases. Phase I: Collect, analyze, and stage the pesticide-contaminated solids, liquids, sludges, and soil on the Aidex site; and Phase II: Transport these materials to a permitted facility for off-site disposal. On-site drainage control measures also were identified for Phase I.

Each technically feasible alternative was determined to prevent or minimize the release of hazardous substances and thereby mitigate substantial danger to public health and the environment. Viable alternatives and their estimated costs are presented as follows:

Alternatives	Preliminary Opinion of Probable Costs
Off-site incineration of liquids and off-site land disposal of solids and residue	$1,108,000 - $1,293,000
Off-site land disposal of solids and solidified liquids	$1,008,000 - $1,263,000
Off-site incineration of all wastes and off-site land disposal of residue	$1,783,000 - $2,193,000

The probable cost of the Phase I project was estimated to be $673,000 to $680,000 regardless of the alternative chosen for Phase II.

Two alternatives were considered which involved on-site incineration of either liquids or both liquids and solids and the on-site land disposal of the incinerator residues and/or solids. A third alternative involved on-site land disposal of solidified liquids and solids. These alternatives were found not to be feasible because: (1) mobile incinerators are not available; (2) the site lacks adequate acceptable space for a landfill; (3) the site lies within the flood plain of the Missouri River; and (4) the hydrogeology of the area, and the close proximity of the site to 42 domestic water wells screened in shallow aquifers, make the site unsuitable for a landfill. In-situ treatment was also considered, but it was determined that biodegradation of the pesticide wastes is not likely to be successful. Finally, the "no action" alternative was considered, but would not solve the problem of rapidly deteriorating site conditions.

Black & Veatch developed the bid package for Phase I of the IRM, and the Corps of Engineers selected D'Appolonia Waste Management Services of Pittsburgh, Pennsylvania to perform the work. A Notice to Proceed was issued by the Corps on June 13, 1983. Work on Phase I is currently underway.

After the Phase I contract was awarded, D'Appolonia submitted a proposal to the Corps to transport off-site and dispose of approximately 46,000 gallons of bulk liquid and semi-solid wastes by deep well injection at Empak, Inc., in Deer Park, Texas. (Contaminated solids will remain on site pending disposal under Phase II). The price quoted was 83 cents per gallon which included all testing, handling and rail transportation necessary for disposal. It also eliminated two bid items associated with temporary storage of the liquids. Installation of a railroad switch is also required to accommodate this option.

$.83/gallon x 46,500 gallons	=	$38,595.00
Minus 2 bid items eliminated	=	$39,300.00
Add railroad switch	=	$ 3,640.00
Net change (plus)	=	$ 2,935.00

The EPA, the State, and the Corps reviewed this proposal and found it to be cost effective to the overall IRM project. The cost of storage tank decontamination, handling and salvaging during Phase II will be saved. Additionally, the materials will only to be handled once. Even though deep well injection was not considered during the IRM Feasibility Study, this method is less expensive than the liquid incineration option considered.

Deep well injection - $.83/gallon
(including transportation and analytical costs)

Liquid incineration - $3.76 - $5.38/gallon
(incineration only; transportation estimated to cost $10,000.00)

The Region has determined that Empak has met the inspection and permitting requirements for facilities selected for disposal of wastes from Superfund sites. The Corps has reached an agreement with D'Appolonia to make the proposed modification for $2,935.

The bid package for Phase II of this IRM is being developed by Black & Veatch. As soon as analytical results are received from the analysis of waste put into storage during Phase I, the bid package will be transferred to the Corps. The Corps will again select a contractor and provide oversight during the implementation of the IRM. The RI/FS for final site remedial action is presently nearing completion.

NARRATIVE SUMMARY

Site History

The Aidex property is presently owned by the City of Glenwood to whom title reverted following a declaration of bankruptcy by the Aidex Corporation which operated as a pesticide formulator. The property, covering approximately 20 acres in a rural area, is located about 7 miles south-southest of Council Bluffs, Iowa, and lies on the Missouri River floodplain and immediately abuts the eastern valley bluff. The distance to the Missouri River channel is about three miles. The property is bounded on the west by the St. Mary's drainage ditch, on the north and east by a county road, and on the south by a cultivated field. Fourty-two (42) shallow domestic water wells have been identified within a two-mile radius of the site. Two residences are located within 1/4 mile of the site.

The Iowa Department of Environmental Quality (IDEQ) and the Environmental Protection Agency (EPA) Region VII became involved with the Aidex site in November 1976, when a fire destroyed the Atrazine formulation building at the facility. Of an estimated 100,000 gallons of water used to extinguist the fire, most infiltrated into the ground or flowed into drainage ways surrounding the plant and leading to St. Mary's ditch. At that time, chemical contamination of the the local plant drainage ways and property was documented by EPA investigators. Following the fire, plant production was greatly reduced and the company filed for bankruptcy in 1980. The EPA began investigation of this facility as a hazardous waste disposal site in 1980.

During the August 1981, bankruptcy sale held at the site to liquidate the assets of the Corporation, ethoprop (Mocap) dust was spilled during removal of the baghouse dust collector which resulted in two workmen being hospitalized with organophosphate poisoning. EPA responded by coordinating cleanup activities. It was also noted that two large metal tanks were drained into a concrete-lined pit at the site of the former atrazine formulation building. The occurrence of these two incidents is believed to be a contributing factor to the contaminated conditions at the site.

The Aidex site was placed on the proposed National Priorities List in October 1981. During December 1981, immediate remedial funds were used to fence the site to control access.

In all, six sampling efforts have been conducted at the Aidex site by EPA. Recently analyzed soil samples show on-site organochlorine, organophosphate and triazine pesticide contamination ranging from several hundred parts per billion (ppb) to several thousand parts per million (ppm). Magnetometer and conductivity surveys have identified two burial trenches on the site.

Samples of ground water under the site indicate that the alluvial aquifer is contaminated. While there is no present indication that this ground water contamination has migrated any significant distance off-site, the potential for contamination of nearby drinking water wells is present. An organic vapor survey did not indicate a significant level of volatile organic compounds in the ambient air despite the strong chemical odor present.

In September 1982, Black & Veatch Consulting Engineers completed a Remedial Action Master Plan which included recommendations for initial remedial measures to abate the deteriorating site conditions. The State and EPA agreed that measures to limit public exposure and prevent wastes from migrating off site were needed even while further remedial investigation and feasibility studies were underway. The State of Iowa signed a State Superfund Contract on October 19, 1982, to pledge a 10 percent match of remedial costs. Subsequently Black & Veatch was tasked to develop a bid package for Phase I of the IRM. The EPA also entered into a Interagency Agreement with the Corps of Engineers to procure a cleanup contractor and to provide oversight during implementation of the IRM.

The Corps selected D'Appolonia Waste Management Services of Pittsburg, Pennsylvania to perform the Phase I work. D'Appolonia was given a Notice to Proceed June 13, 1983. Phase I work is currently underway.

Current Status

Procedures used by Aidex Corporation for handling, storing, and disposing of pesticide formulation process wastes, together with the effects of runoff from past firefighting operations, have resulted in at least 16 pesticide compounds being available for transport from the site by runoff or infiltration into the ground water. The hazards presented by runoff are worsened by the fact that the site is subjected to uncontrolled runoff by rainwater from the bluffs to the east.

Following removal operations by others and a bankruptcy court auction of plant equipment and fixtures, the site now contains five above-grade tank shells, one buried tank, one below-grade open pit and trench, approximately 3,400 drums, miscellaneous scattered debris and extensively contaminated soil. The estimated inventory of the buried tank, the concrete pit and trench is 34,500 gallons of liquid and 12,000 gallons of semi-solid sludge. At the time of the feasibility study for the IRM, it was estimated that of the 3,400 drums, 1,000 were filled with solids, 1,000 partially full of liquids and sludges and 1,400 were empty. Since that study was completed, some 1,200 drums of solids were removed by a responsible party.

Remedial Options

The feasibility study for Initial Remedial Measure evaluated remedial options which could be utilized for cleanup of the Aidex site using the following criteria:

a) Effectiveness
b) Technical feasibility
c) Cost effectiveness
d) Environmental considerations; and
e) Implementation time frame.

IRM alternatives were identified for the three most significantly contaminated segments of the hazardous waste problems at the Aidex site:

- Contaminated liquids
- Contaminated sludges
- Highly contaminated soil beneath drum stacks.

Subsequently eight IRM alternatives were identified. They are summarized and compared below.

	Activity	Estimated Cost ($1000)
1.	No action	$0.
2.	Treatment in-situ	Not technically feasible
3.	On-site incineration and on-site land disposal of residue	Not technically feasible
4.	On-site incineration of liquids and on-site land disposal of solids and residue	Not technically feasible
5.	On-site land disposal of solids and solidified liquids	Not technically feasible
6.	Off-site incineration of solids and liquids and off-site land disposal of residue	$1,783,000 - 2,193.000
7.	Off-site incineration of liquids and off-site land disposal of solids and residue	$1,108,000 - 1,293,000
8.	Off-site land disposal of solid and solidified liquid wastes.	$1,008,000 - 1,263,000

These alternatives are also summarized and compared in Table 1 (see attachment). Alternative 7 (Off-site incineration of liquids and land disposal of solids residue) and Alternative 8 (off-site land disposal of solidified liquids and solids) were both considered to be technically feasible, cost effective, expedient and would protect public health and the environment. When the Feasibility Study for the IRM was completed, disposal actions would only have occurred as part of Phase II. However, with the proposal submitted by D'Appolonia, and described in the Briefing Sheet, disposal of bulk liquids could occur during Phase I.

The No-Action Alternative would not solve the problem of continued deteriorating site conditions. Wastes would remain uncontrolled on the surface of the site and be subject to leaching into ground water and migration off-site via surface runoff. On-site options were found not to be technically feasible because mobile incinerators are not yet available for production use and suitable space is not available for landfilling. Also, site hydrogeology is not suitable for landfill options.

Recommended Alternataives

Section 300.68(j) of the National Contingency Plan (NCP) (40 CFR Part 300) July 16, 1982, states that the appropriate extent of remedy shall be determined by the lead agency's selection of the remedial alternative which the agency determines is cost-effective (i.e., the lowest cost alternative that is technologically feasible and reliable and which effectively mitigates and minimizes damage to and provides adequate protection of public health, welfare, or the environment). Based on our evaluation of the cost effectiveness of each alternative, on information from the State, and comments by the public, we have determined that off-site disposal of waste from the Aidex site and on-site drainage control meet NCP criteria.

State Input

The State of Iowa has reviewed all feasibility study and remedial plans regarding the Aidex site which EPA prepared. The State fully concurred on the plans for initial remedial measures by signing Amendment No. 1 to the Aidex Superfund State Contract which provided $50,000 in matching funds for Phase I. The State also concurs that off-site disposal of bulk liquid wastes should occur during Phase I, and has submitted, in draft, Amendment No. 2 to show such concurrence. In addition, the attached letter from the State supports the proposed actions.

Public Input

A community relations program was initiated for the Aidex site in October 1981 when the site was placed on the Interim National Priority List and the FIT investigation was begun. In November 1981, EPA Region VII staff spoke at a county supervisors meeting in Glenwood, Iowa, concerning the problems at the Aidex site. This meeting was open to the public.

On May 12, 1983, an informational public meeting on the Aidex site as a Superfund Project was held at the Courthouse in Glenwood, Iowa. This public meeting was arranged for the purpose of familiarizing citizens with governmental agencies providing oversight of the work, to discuss with them the work to be performed during each phase, and to give citizens the opportunity to ask questions and voice concerns. Off-site disposal of waste was specifically discussed. Citizens and members of the media alike expressed their agreement with the plan to move the materials to a secure permitted disposal facility.

Copies of technical reports and the IRM Feasibility Study have been made available to the public in the office of the County Auditor for Mills County. Bi-weekly progress reports are being sent to the County Auditor for dissemination to the public. The citizens living in the area around the site have shown most concern for a prompt implementation of remedial measures and that they are kept informed on site activities.

Enforcement Status

A civil action filed pursuant to Section 7003 of RCRA against Aidex Corporation for injunctive relief is pending. A responsible party search is being completed by the National Enforcement Investigation Center (NEIC). Upon completion, we will amend the complaint to add additional parties and a count for cost recovery under §107 of CERCLA, or file a completely new complaint for cost recovery.

In proceedings before the U.S. Bankruptcy Court, District of Nebraska, we have filed an order for transfer to EPA of funds remaining in the estate and which have been put aside pursuant to a stipulation between EPA and secured creditors of the bankrupt corporation. Additionally, we are seeking an order of the court declaring agency expenditures for cleanup of the site as administrative expenses of the estate entitled to first priority payment.

Proposed Action

We request your approval for off-site disposal of bulk liquids and semi-solids by deep well injection during Phase I of the IRM for the Aidex site. Additionally, we request approval for off-site disposal of solids, soils, and debris from the site during Phase II of the IRM for this site.

If you have any questions, please contact Kerry Herndon at FTS 758-6864.

Attachments

TABLE 1

COMPARISON OF ALTERNATIVES

Alternative	Solves Current Problem	Technical Feasibility	Preliminary Opinion of Probable Cost ($1,000)[1]	Environmental Considerations	Implementation Time (Months)[2]
1. No Action	NO	N/A	N/A	N/A	N/A
2. Treatment	NO	Most of the pesticide compounds not amenable to treatment	N/A	N/A	N/A
3. On-site incineration and on-site land disposal of residue	Doubtful	Mobile incinerators not available for production use	N/A	N/A	N/A
4. On-site incineration of liquids and on-site land disposal of solids and residue	Doubtful	Mobile incinerators not available. No suitable space on-site for landfill	N/A	Poor setting for hazardous waste landfill	15-18
5. On-site land disposal of solids and solidified liquids	Yes	No suitable space on-site for landfill. Study needed to test solidification methods	N/A	Poor setting for hazardous waste landfill	15-18
6. Off-site incineration and off-site land disposal of residue	Yes	Yes	1,783-2,193	None apparent	6[3]
7. Off-site incineration of liquids and off-site land disposal of solids and residue	Yes	Yes	1,108-1,293	None apparent	6[3]
8. Off-site land disposal of solids and solidified liquids	Yes	Study needed to test solidification methods	1,008-1,263	None apparent	6[3]

NOTES:

1. See Table 2 for details of cost analysis.
2. Implementation time is the time required to develop the contract drawings and documents, select a Contractor and complete the work.
3. Based on time to develop analytical information during Phase I activities.

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

-12-

DATE: JUL 29 1983

SUBJECT: Amendment to Iowa State Superfund Contract

FROM: Director, Air and Waste Management Division

TO: William Hedeman, Director
Office of Emergency and Remedial Response (WH-548)

Attached is a draft copy of the State Superfund Contract amendment for the Aidex Site, Iowa. We and the State believe this amendment is necessary because the existing contract only describes storage and containment of waste materials during Phase I of the Initial Remedial Measure. D'Appolonia Waste Management Services, the Phase I IRM contractor, has now proposed off-site shipment and disposal of bulk liquids. We believe this proposal will reduce the total IRM cost and recommend your approval of this amendment. A record of decision addressing the disposal has been prepared and sent to you under separate cover.

David

David A. Wagoner
Director, Air and Waste Management Division

Attachment

EPA Form 1320-6 (Rev. 3-76)

cc RA/DRA

iowa department of environmental quality
reply to Stephen W. Ballou - Main Office
phone 515/281-8854

June 30, 1983

Morris Kay, Regional Administrator
U.S. EPA Region VII
324 E. 11th St.
Kansas City, MO 64016

Dear ~~Mr. Kay~~ Morris:

It is my understanding that D'Appalonia Waste Management Services has proposed bulk rail shipment of liquids from the site to a permitted Texas deep well injection facility. This would increase "Phase I" costs but reduce future remedial action costs. To allow for this change in scope, your staff transmitted a draft contract amendment to us on June 16, 1983. In support of this effort, I would suggest that this draft contract amendment be revised to read as indicated in the attached draft.

I trust this will cause no difficulties since this has been the subject of some discussion amongst our staffs.

Sincerely,

Stephen W. Ballou
Executive Director

SWB:klg

Attachment

RECEIVED
JUL 5 1983
RCRA
EPA Region VII

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

DATE

SUBJECT Summary of Contacts with Region VI and State of Texas on Disposal of Wastes from Aidex Site

FROM: Kerry Herndon, RSPO
Aidex Site, Region VII

TO Dave Huber, Design and Construction Section
(WH-548-E)

6/13/83 - Received copy of proposal from D'Appolonia for offsite disposal of bulk liquid wastes.

6/13/83 - Telephone call from Dennis Degner, Region VII RCRA Permits, to Marty Allen, RCRA Permits Region VI, on what wastes Empak is authorized to receive. Determined that Aidex wastes within permitted parameters.

6/14/83 - Telephone call from Dennis Degner to Marion Roth, Region VI RCRA Compliance, on whether facility had been inspected in last 12 months. She referred him to Bill Brown at Texas Dept. of Water Resources (TDWR) in Austin.

6/14/83 - Telephone call from Kerry Herndon to Bill Brown who referred me to Marie Murphy, TDWR. She said facility last inspected September 1982. Facility in compliance with RCRA.

7/1/83 - Letter from Kerry Herndon to Gary Schroeder, Chief, Solid Waste and Spill Response Section, TDWR requesting written verification on status of Empak.

7/14/83 - Letter received from Gary Schroeder, TDWR, stating that facility in compliance with RCRA and in good standing with State.

8/2/83 - Telephone call from Minor Hibbs, TDWR, to Kerry Herndon. He said since EPA will generate wastes we should be aware of Texas manifest requirements. We reviewed these. Told him D'Appolonnia will be responsible for aquiring and completing manifest. (I gave D'Appolonia Hibbs' phone number.)

8/3/83 - Telephone call from Ed Hatton, TDWR, to Kerry Herndon. He said he had heard that wastes from Aidex were going to Deer Park; wanted some information. Explained that I had been in touch with Murphy, Schoeder and Biggs. He said I had covered the bases; he would talk to them.

8/10/83 - Telephone call from Sam Knobb, Region VII to Kerry Herndon to confirm that Region VII still planning to ship wastes to Empak. Told him we had worked out details with TDWR.

If I can provide further details, please let me know.